White paper

K630i

Your Music-service phone

Sony Ericsson

Preface

Purpose of this document

This White paper will be published in several revisions as the phone is developed. Therefore, some of the headings and tables in this document contain limited information. Additional information and facts will be forthcoming in later revisions.

The aim of this White paper is to give the reader an understanding of the main functions and features of this phone.

People who can benefit from this document include:

- Operators
- Service providers
- Software developers
- Support engineers
- Application developers

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Sony Ericsson Developer World

On www.sonyericsson.com/developer, developers will find documentation and tools such as phone White papers, Developers guidelines for different technologies, SDKs and relevant APIs. The Web site also contains discussion forums monitored by the Sony Ericsson Developer Support team, an extensive Knowledge Base, Tips & Tricks, example code and news.

Sony Ericsson also offers technical support services to professional developers. For more information about these professional services, go to the Sony Ericsson Developer World Web site.

Document history

Change history		
2007-06-25	Version 1	First revision
2007-09-18	Version 2	Second revision

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Contents

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Product overview

With compact and smooth design, K630i introduces new experiences for a Music Life with extraordinary new functionality for Music player. The need for multiple devices – such as a mobile phone, a digital camera, a music player and more – are all in the one device with easy-to-use functionality. A premium design to withstand everyday use and age with honour.

The slim, elegant stick form factor has a large 2.0-inch colour screen. Memory capacity is up to 34 MB internally. With Memory Stick Micro™ (M2™) memory card reader, you can add more storage space to your phone. The horizontal digital camera menu makes the 2.0 megapixel camera even more easy-to-use. You can share full-size images using mobile blogging, print pictures directly on a printer with PicBridge™. With PlayNow™ 4.0 and TrackID™ services, you can easily find and download new music and games. Make voice or video calls or enjoy 3D games. The ergonomic keypad allows you to write text messages quickly. You can multitask with applications running in the background, for example, talk and browse, send messages or download music at the same time.

Key features

2.0 Megapixel camera

The main camera is 2.0 Megapixel and includes 2.5x digital zoom for still images in VGA mode and 4x digital zoom for video recording and 2x for video telephony. The horizontal user interface allows for easier camera handling. A picture can be shared as a picture message or email message with friends or family, or using any available transfer methods, such as Bluetooth™.The phone supports QCIF (Quarter Common Intermediate Format) size video recording.

2.0-inch colour screen

The large 2.0-inch (176x220 pixels) QCIF 262k colour screen enhances viewing, facilitating high-quality multimedia and entertainment.

Video call camera

There is also a QCIF video call camera. Accessing video call mode from the main menu activates the QCIF video call camera.

Memory card reader

The extra memory slot supports memory cards up to 4 GB. Different kinds of content (pictures, audio, video clips, etc.) can be stored on memory cards, and transferred to other memory cards – compatible consumer products, for example, Sony digital cameras, camcorders, portable music players, TVs, photo printers and computers.

Web feeds

A built-in Really Simple Syndication (RSS) Reader is used in combination with the Internet browser. When browsing, frequently updated content, such as news headlines or podcasts, can be received as feeds.

HTML Web browser support

Browse the Internet and look at the Web sites in a different way with Access NetFront 3.4 – an HTML browser which supports a complete Web standard suite.

Mobile blogging

Send pictures and video clips using the Internet to show on your personal Web page, allowing people easy access to view and comment on your pictures and video clips.

Photo tags

Browse among thumbnail images of all photos, video clips and pictures in the phone. Add selected photos to an album using tags, and view photos in a slide show with different effects.

PictBridge™ – Camera album printing

Transfer images from the phone to a printer using the USB cable and without a computer or photo editing software.

Push email

The phone supports push email, a method of pushing new emails automatically to mobile devices. Push email increases mobile email usability, with email being delivered in the background (similar to SMS or MMS).

Media

A unique Sony Ericsson media experience. All media can be accessed directly from the desktop. Navigate seamlessly through captured photos and video clips, pictures, photo tags, music, video clips and more.

Music player
Located in Media. Play downloaded music and audio. The navigation system enables you, for example, to browse through your favourite tracks and create simple playlists.

Video player
Located in Media. Play stored and downloaded video clips.

Mobile TV
Located in Media. View streaming video in Netchannels and organize your channels into favourites.

Sony Ericsson Media Manager
Music, photo and video clip management software is available on www.sonyericsson.com/support. Transfer music, video clips and photos to and from your phone. Prepare files for transfer even when your phone is not connected to your computer. Search for and select music on your computer or audio CDs and convert your existing audio tracks to formats that are suitable for mobile use before transferring them to your phone. You can also subscribe to feeds such as video and music podcasts.

RDS FM Radio
The FM radio with RDS (Radio Data System) offers instant and easy access to FM radio channels. The RDS function brings information directly to the screen, which is sent out by the currently tuned in radio station. Just plug in the handsfree that works as an antenna and start listening to desired music. The radio can also be used as an alarm signal.

Music recognition – TrackID™
Obtain title, artist and album information about songs you hear and like. Recording music from an external source, using the microphone, or enter text to search for artist, track, album, lyrics and more.

PlayNow™ 4.0
A unique and easy-to-use direct link for the downloading of content in the form of music files, games and images. You have access to a catalogue of more than 100,000 tracks from SonyBMG and other labels. For example, select PlayNow™ 4.0 and go straight to a live list of top music hits, available for full music track download. All formats that are supported by the phone will be supported. Music and images may be previewed before purchase. Payment methods include Google Checkout, as well as premium SMS.

3D Gaming
Gaming is a very popular feature in mobile phones, and with Java™, users can download new games and skill levels to further enhance their entertainment experience. Several embedded games are included in the phone at purchase.

Java™
Download additional applications which are information- and entertainment- based. This gives users a chance to personalize the functions and features in their phones, and developers the opportunity to create new applications. Java Platform 8 (JP-8), supports a range of new Java programming features including

instant messaging/chat and presence based functionality, handling banking, payment transactions, user identification and authentication through secure encryption technology.

Bluetooth™ wireless technology

Several devices (simultaneous Bluetooth™ connections) can be connected up to 10 metres (33 feet) away using Bluetooth wireless technology. For example, when the phone rings, it can be answered with a Bluetooth headset, and images can be sent to another phone at the same time. Several mobile phones can take part in a Bluetooth-supported game and the phone and a computer can exchange data such as images, video clips, vCards, music files and calendar data. There is support for Bluetooth version 2.0.

Bluetooth™ audio streaming

Listen to audio in compatible devices. By connecting a Bluetooth Advanced Audio Distribution Profile (A2DP) compatible accessory you can enjoy high quality stereo audio streaming wirelessly from the phone. Many A2DP accessories also support the Bluetooth Audio Video Remote Control Profile (AVRCP) – allowing you to control the music player in the phone using the accessory interface.

USB 2.0 mass storage

When connecting the phone to a computer using the provided USB cable, the Memory Stick Micro™ (M2™) appears on the computer screen as a removable disk along with other disks and drives in the computer. You can then quickly and easily drag and drop items such as images, documents, music files and video clips between folders in the phone and the computer.

Personal Information Management (PIM)

Stay up-to-date with everyday events by synchronizing phone contacts, calendar appointments and tasks in the phone with similar programs in a computer. The USB cable which comes with the phone, or the built-in Bluetooth feature can be used together with the synchronization software which can be downloaded from www.sonyericsson.com/support. Smart search your contacts and call list for phone numbers or names from standby.

Media Transfer Protocol (MTP)

With Media Transfer Protocol you can transfer media files and synchronize playlists when the phone is connected to the computer using the USB cable. It is possible to use MTP in Media transfer mode or Phone mode. MTP is supported by Windows Media Player 10 and 11 in Windows XP and in Windows Vista it is also supported.

Common Internet File System (CIFS)

The Common Internet File System enables file transfer to and from your phone. The phone acts as a file server which allows you to copy and move files between your PC and the server. You can use this feature when connected using the USB cable or the Bluetooth™ connection.

Images

Technologies in detail

This chapter includes short descriptions of the technologies available in this product compared to one other Sony Ericsson product.

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Functions and features

The following includes short descriptions of the technologies available in K630i compared to the W660.

Feature	K630i	W660i
3D games	Yes	Yes
3G enabled	Yes	Yes
Activity menu (multi-tasking) The user can easily handle missed calls, new text and picture messages, task reminders, shortcuts and get quick access to favourite Internet bookmarks	Yes with enhanced functionality for background applications	Yes with enhanced functionality for background applications
Alarm clock Set up to five individual times for single or recurrent weekly alarms	Yes	Yes
Backlight White backlight to illuminate the phone screen	Yes	Yes
Battery	3.6 V, 950 mAh, Lithium Polymer	3.6 V, 950 mAh, Lithium Polymer
Battery charging time	At least 90% charged within 2 hours. Fully charged within 2.5 hours	At least 90% charged within 2 hours. Fully charged within 2.5 hours
Bluetooth™ audio streaming Listen to audio in compatible devices	Yes	Yes
Bluetooth™ audio video remote control Control music player functions from a Bluetooth™ accessory, and control the volume in the accessory from the phone	Yes	Yes
Bluetooth™ PAN Connect the phone to Internet using Bluetooth™ Wireless Technology	Yes	Yes
Bluetooth™ wireless technology Wireless connectivity between devices within a range of up to 10 metres (33 feet). Support for specification of the Bluetooth System, version 2.0	Yes	Yes

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Feature	K630i	W660i
Business card exchange Exchange contact information	Yes	Yes
Calculator	Yes	Yes
Calendar Calendar with day, week and month views and reminders	Yes with enhanced functionality	Yes with enhanced functionality
Call list View calls made and calls received	Yes	Yes
Camera	2.0 Megapixel	2.0 Megapixel
Camera key A dedicated camera key. Press and hold to activate the integrated camera	Yes	Yes
Camera file browser Browse the picture folder without leaving the camera function	Yes	Yes
Camera keys on top When the camera is used in horizontal mode, the side keys with camera functionality are on top, for a digital still camera feel. For photo key functionality, see also "Keys – side and other" on page 17	Yes	Yes
Camera menu Easy-to-use horizontal digital camera menu	Yes	Yes
Chinese input method Chinese input methods: Text input methods based on Simplified or Traditional Chinese. Bopomofo, Pinyin or Stroke	Yes	Yes
Clock On-screen clock that keeps time even when the phone is off	Yes	Yes
Co-branding area	19 x 3.7 mm	30 x 5.6 mm

Feature	K630i	W660i
Code memo A safe place to store all PIN codes and other information. To access Code memo, only one PIN code is needed	Yes	Yes
Colour	Quick Black or Havanna Gold	Record Black or Rose Red
Contacts Phonebook with fields for name, phone and fax numbers, email address, Web site, title, company address info, personal address info and birthday	Yes	Yes
Conference calls Support for multi-party calling	Yes	Yes
Connector A1 (Fast port)	Yes (bottom)	Yes (bottom)
Content online Downloadable pictures, games, themes, ringtones available online	Yes	Yes
Copyright protection – DRM DRM (Digital Rights Management) features the rights and copy protection of downloaded content (audio, pictures, music tones, video clips, entertainment features such as games, Java applications etc.)	Yes, OMA DRM 1.0 and OMA DRM 2.0	Yes
Device Management (DM) DM utilizes GPRS as a bearer (basic network connectivity needs to be in place) of the provisioning data and allows the operator to access the phone and check and send out different settings such as network connectivity (GPRS), email, MMS, WAP and Java™. Device Management is achieved by supporting OMA Client Provisioning 1.1 (CP) and OMA Device Management (DM) 1.2	Yes	Yes
Digital zoom	2.5x for pictures 4x for video clips 2x for video calls	2.5x for pictures 4x for video clips 2x for video calls
Email Built-in email client with inbox, outbox, compose, send and other functions	Yes	Yes

Feature	K630i	W660i
EMS (Enhanced Messaging) Text messaging (SMS) with support for pictures and sounds	Yes	Yes
Exterior description Size mm (Length x width x thickness)	103.0 x 47.0 x 15.5	102.0 x 46.0 x 14.5
External antenna connector For use with an advanced car handsfree accessory	No	Yes
Fast port A system connector which enables faster data transfer between the phone and a computer	Yes (bottom)	Yes (bottom)
File manager Folder structure storage to help store and organize pictures, sounds and other phone content	Yes with enhanced functionality for camera content	Yes with enhanced functionality for camera content
Flash themes	Yes	Yes
Flight mode All phone radio transceivers are inactivated. Flight mode starts the phone so that only certain functions available, such as the calendar, music player or a game. The phone may then be used in some areas, such as airplanes or hospitals, where full mobile phone functionality is not allowed. Bluetooth™ function availability in Flight mode	Yes Yes	Yes Yes
FM radio with RDS FM radio with presets, auto and manual search. The handsfree is used as an antenna. The radio can also be used as an alarm signal	Yes	Yes
FM radio with TrackID™ Identify tracks playing on the radio	Yes	Yes
Form factor	Stick	Stick
Games download	Yes	Yes
Games embedded	Yes	Yes

Feature	K630i	W660i
GPRS General Packet Radio Services – a communications standard enabling packet data transfer of 21.4 Kbps per timeslot. Multislot class 10 supported (maximum 5 simultaneously)	Yes	Yes
High Speed Data HSCSD – a communications standard enabling GSM data transfer at 14.4 – 28.8 Kbps	No	Yes
HSDPA – High Speed Downlink Packet Access	Yes	No
Icon Desktop 12 A graphic icon desktop with 12 interactive icons	Yes	Yes
Image formats		
VGA (640x480 pixels)	Yes	Yes
1 MP (1280x960 pixels)	Yes	Yes
2 MP (1600x1200 pixels) Note: MP = Megapixel	Yes	Yes
Instant messaging (Wireless Village/My friends) Chat – several people can take part in a mobile messaging session. Instant messaging/Wireless Village server community	Yes	Yes
Internet blogging Share up to full-size pictures over the Internet on your personal Web page. The size of uploaded pictures is dependent on customizations	Yes	Yes

Feature	K630i	W660i
Internet browser	Yes	Yes
cHTML – A mobile device adapted version of the standard Internet communications protocol HTML	Yes	Yes
iHTML – Inline HTML, an advanced server-side scripting language that allows the customization of dynamic Web sites	Yes	Yes
Full HTML support, ECMA script, DOM level 1& 2, etc.	Yes	Yes
Progressive download of video clips	Yes	Yes
Direct access to Search Internet and Enter address	Yes	No
Internet security Encrypts confidential information such as credit card and bank account numbers. Necessary for mobile banking and shopping	Yes, SSL/TLS	Yes, SSL/TLS
Java™ Support for J2ME™ technology	Java 2, Micro Edition (J2ME), Java 3D™	Java 2, Micro Edition (J2ME), Java 3D™
Java Platform 8 (JP-8) Support for new Java programming features including instant messaging/chat, banking, payment transactions, user identification and authentication through secure encryption technology	Yes	No
Keys – navigation and more 	4+1 navigation keys multimedia (play/stop) on navigation key centre 2 selection keys C (Clear) key Activity menu Red end key Green call key	4+1 navigation keys 2 selection keys Back key C (Clear) key Activity menu Walkman® player key
Keys – keypad	12 alphanumeric	12 alphanumeric

Feature	K630i	W660i
Keys – side and other	On/off key Volume/camera zoom key Camera key	On/off key Volume/camera zoom key Camera key Multimedia (play/stop) key
Lunar calendar A calendar system used in China and other parts of Asia. A lunar month is determined by the period required for the moon to complete its full cycle of 29.5 days and is available in Chinese phone variants	Yes	Yes
Adobe® Flash Lite™ For impressive animated wallpapers, menus and other graphic elements	Yes	Yes
Media A centre for all media content with sideways navigation. You can view photos and video clips, listen to music	Yes	No
Media player	See Music player and Video player	See Walkman® player and Video player
Mega Bass™ An audio feature which enhances bass frequencies for better overall music experience	Yes	Yes
Memory (built-in) User-dedicated memory in phone	Up to 34 MB	Up to 16 MB
Memory card reader (slot) A slot for inserting a micro peripheral storage device. Memory card support: Memory Stick Micro™ (M2™)	Yes Yes	Yes Yes
Menu shortcuts A function making it possible to dedicate shortcuts to the most used phone functions	Yes	Yes
MMS (Multimedia messaging) Picture messaging with text and sound	Yes	Yes

Feature	K630i	W660i
MMS video Support in the phone for sending video clips using MMS	Yes	Yes
Modem Circuit Switched/Packet Switched Internet dial-up support	Yes	Yes
MusicDJ™ A sampler music tool with MIDI drum, guitar, keyboard, bass and brass loops in different music styles, which can be combined to create polyphonic ringtones	Yes	Yes
Music listening time (with loudspeaker on)	Up to 17 hours	Up to 20 hours
Music player 3.0 A digital music player with sideways navigation. Play music you have transferred or downloaded. The list structure system enables you, for example, to organize favourite songs into groups and create simple playlists. A practical play/stop function makes it easier to listen to music any time, anywhere. You can also manage settings and more	Yes	No, see Walkman® player
Music tones Music tones, also called master tones, are DRM protected music by original artists. Various digital audio formats are supported	Yes	Yes
Networks 3G/HSDPA GSM/GPRS/EDGE	UMTS 2100/HSDPA GSM (R99) 900, 1800, 1900, E-GSM 900	UMTS 2100 GSM (R99) 900, 1800, 1900, E-GSM 900
OMA Data Synchronization (SyncML) A device communications standard that enables remote synchronization between devices	Yes SyncML 1.2 SyncML 1.1	Yes SyncML 1.2 SyncML 1.1
OTA settings WAP, email and other settings can be sent Over-The-Air to the phone	Yes	Yes

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Feature	K630i	W660i
PhotoDJ™ A drawing tool in the phone where existing pictures can be altered	Yes	Yes
Photo fix Improves an under-exposed picture by calculating and adjusting the light balance	Yes	No
PictBridge Transfer images from the phone using USB cable directly to a printer, without a computer or photo editing software	Yes	Yes
Picture gallery A thumbnail image gallery where sections of several pictures can be viewed at the same time	Yes Use photo tags	Yes
Picture phone book Add a picture to a saved contact. The picture appears on the screen when the stored contact calls	Yes	Yes
PlayNow™ (direct-link) Listen to music before you purchase and download to your phone	Yes	Yes
PlayNow™ Games (direct-link) Download and purchase games straight from the phone desktop	Yes	Yes
Polyphonic voices	72	72
Predictive text input	Yes	Yes
Push email	Yes	Yes
RSS Reader	See Web feeds	See Web feeds
RSS Ticker	Yes	No
Screen Type: Size: Resolution: Technology: Colours displayed together: Backlight colour:	Full graphical 2.0 inches 176x220 pixels TFT, QCIF+alpha 262,000 (18 bit) White	Full graphical 2.0 inches 176x220 pixels TFT, QCIF+alpha 262,000 (18 bit) White

Feature	K630i	W660i
Screensaver	Yes	Yes
Settings download (Ready to run) Set up functions, such as the Internet browser and Picture messaging, that require a connection to the Internet. This function runs in the setup wizard or can also be chosen in the Settings Menu. This function is not included in the setup wizard for customized phones	Yes	Yes
SIM card lock The possibility to protect the SIM card with a four-digit PIN code	Yes	Yes
SMS long (Text messaging) Concatenated SMS text messaging	Yes	Yes
Sleep mode A power saving feature that minimizes battery power consumed when the phone is in standby	Yes	Yes
Sony Ericsson Remote Update Service Download the latest operator-approved software, over the air, for your mobile phone	Yes	Yes
Sony Ericsson Update Service Connect the phone to an Internet-connected computer, download the latest operator-approved version of the mobile device software from the Web site www.sonyericsson.com/support and update the mobile device	Yes	Yes
Sound recorder A mini recording device in the phone that can record voice messages or other sounds	Yes	Yes
Speakerphone	Yes	Yes
Speed dialling Allocate contacts in the phone book to specific keys on the keypad	Yes	Yes
Standby time	Target GSM: up to 350 hours UMTS: up to 378 hours	Target GSM: up to 395 hours UMTS: up to 395 hours

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Feature	K630i	W660i
Status view The screen shows the network being used, time and other status information	Yes	Yes
Stopwatch	Yes	Yes
SVG Tiny Scalable Vector Graphics for impressive animated wallpapers, menus and other graphic elements	Yes, version 1.2	Yes, version 1.1
Synchronization computer Synchronize and share phone content with a computer	Yes	Yes
Talk time GSM UMTS	Up to: 10 hours 4.9 hours	Up to: 9 hours 3 hours
Tasks Keeps track of important things you have to do	Yes	Yes
Themes Phone menu texts and background graphics	Yes	Yes
Timer Set the phone to alert after a specific time	Yes	Yes
TrackID™ Music recognition Text search for artist, album, track, lyrics etc.	Yes	Yes
Twin camera Two cameras – a main megapixel camera capable of taking still pictures/recording video and an additional video call camera optimized for video calls located above the screen	Yes	Yes
UMTS	Yes	Yes
USB connectivity support Connect the phone to a computer with the USB cable provided and the memory in the phone appears on the computer screen as a mass storage device	Yes USB 2.0 Full Speed	Yes

Feature	K630i	W660i
USB ethernet emulation Connect to the Internet using the phone or the computer	Yes	Yes
Vibrating alert The phone vibrates when a call comes in	Yes	Yes
Video blogging Share video clips over the Internet on your personal Web page. The size of uploaded video clips is dependent on customizations	Yes	No
Video call camera	Yes	Yes
Video calling When making a video call, the called party can be seen in the screen. The service requires UMTS/WCDMA	Yes	Yes
Video call talk time	Up to 2.6 hours	Up to 2 hours
VideoDJ™ Create video sequences by combining different clips and adding music and images	Yes	Yes
Video player Play video clips you have transferred or downloaded. Transfer video clips to another phone or a computer using any available transfer method	Yes	Yes
Video streaming Real time streaming of video, for example, live cam. Media can also be downloaded and saved in the phone memory	Yes	Yes
Viewfinder When using an in-phone camera or snap-on accessory camera, the picture can be previewed before it is captured	Yes	Yes
Voice control Voice answer, reject and call. Assign voice commands to items in the phone book and when a call is made, the voice command can be used instead of pressing keys	Yes	Yes

Feature	K630i	W660i
Voice mail Support for voice mail operator service including automatic answering and message recording	Yes	Yes
Walkman® key Get direct access to your music files without having to browse the menus. Press the Walkman® key to gain direct access to the Walkman® player	No	Yes
Walkman® player A digital Walkman® player. It is possible to play music files in the folder system, organize your favourite songs into groups and create simple playlists. A play and pause function simplifies listening	No, see Music player	Yes
WAP 1.2.1 A mobile Internet standard to access specially designed Internet sites	Yes	Yes
WAP 2.0 XHTML A mobile Internet standard to access specially designed Internet sites. WAP 2.0 supports colour and interactive lists	Yes	Yes
Web feeds Frequently updated content delivered as feeds using a Web site, for example, news headlines in the browser	Yes	Yes
Weight	97 g	93 g

Facts and figures

This chapter offers readers a detailed listing of all the technical data relating to the product. Comprehensive descriptions of performance and technical characteristics are presented in table format for quick and easy access.

Technical specifications

General technical data

System	GSM/GPRS 900/1800/1900 MHz, EDGE 900/1800/1900 MHz, HSDPA/WCDMA 2100
Speech coding	FR, EFR, AMR supported where available, for high speech quality
GSM SIM/ UMTS USIM card	GSM SIM – GSM 11.11, UMTS SIM – 3GPP™ TS 31.101. Small plug-in card, 1,8 V and 3 V
Memory	Up to 34 MB internal (depending on software configuration/file content) + extra slot for supported memory cards
Data transfer speeds	Up to 3.6 Mbps (downlink, HSDPA, cat 6) Up to 384 Kbps (uplink, WCDMA R99)

Performance and technical characteristics

Dimension	**WCDMA 2100**
Frequency range (MHz)	TX: 1920 – 1980 RX: 2110 – 2170
Channel spacing	5 MHz with 200 KHz channel rasters
Number of channels	277
Modulation	QPSK (WCDMA R99) QPSK/16 QAM (HSDPA)
TTI	10 ms (WCDMA R99) 2 ms (HSDPA)
TX Phase Accuracy	Error Vector Magnitude: <17.5%
Duplex spacing	190 MHz
Frequency stability	+/– 0.1 ppm
Voltage operation (nominal)	3.6 V
Transmitter RF power output	24 dBm Class 3 (0.25 W peak)
Transmitter Output impedance	50 ohm
Transmitter Spurious emission (according to specification)	< –36 dBm up to 1 GHz < –30 dBm over 1 GHz (according to 3GPP™ spec.)

Dimension	WCDMA 2100
Receiver RF sensitivity	Better than −106.7 dBm @ 12.2 Kbps CS voice
Receiver RX Bit error rate	< 0.1%

Dimension	GSM 900/ E-GSM 900	GSM 1800	GSM 1900
Frequency range (MHz)	TX: 880 – 915 RX: 925 – 960	TX: 1710 – 1785 RX: 1805 – 1880	TX:1850 –1910 RX:1930 – 1990
Channel spacing	200 KHz	200 KHz	200 KHz
Number of channels	174 Carriers *8 (TDMA)	374 Carriers *8 (TDMA)	299 Carriers *8 (TDMA)
Modulation	GMSK, 8PSK	GMSK, 8PSK	GMSK, 8PSK
TX Phase Accuracy	< 5° RMS Phase error (burst)	< 5° RMS Phase error (burst)	< 5° RMS Phase error (burst)
Duplex spacing	45 MHz	95 MHz	80 MHz
Frequency stability	+/− 0.1 ppm	+/− 0.1 ppm	+/− 0.1 ppm
Voltage operation (nominal)	3.6 V	3.6 V	3.6 V
Transmitter RF power output	33 dBm Class 4 (2 W peak)	30 dBm Class 1 (1 W peak)	30 dBm Class 1 (1 W peak)
Transmitter Output impedance	50 ohm	50 ohm	50 ohm
Transmitter Spurious emission (according to specification)	< −36 dBm up to 1 GHz < −30 dBm over 1 GHz	< −30 dBm	< −30 dBm
Receiver RF sensitivity	Better than −102 dBm	−102 dBm	−102 dBm
Receiver RX Bit error rate	< 2.4%	< 2.4%	< 2.4%

USSD technical data

Feature	Support
USSD support	GSM Phase 1/2 (Cross-phase compatibility)
Mode support -mode	UI-mode supported SAT initiated USSD supported
UI-mode details	• It is possible to scroll the text up and down in USSD messages. • It is possible to highlight embedded numbers and take actions accordingly.

GPRS technical data

Dimension	Support
Compatible GPRS and SMG specifications	Release 99 according to ETSI specification
Data rates	Multislot class 10 supported (maximum 5 simultaneously) CS-1, CS-2, CS-3, CS-4 9,050 bps, 13,400 bps, 15,600 bps, 21,400 bps supported (network-dependent)
Medium Access Modes	Dynamic allocation
Support of Packet Control Channels (PBCCH/PCCCH)	Yes
Network operation mode	NOM I, II, III
Support of GPRS/CS combined procedures	Yes
Network control mode	NC0 and 2
Support of access in 2 phases	Yes
Support of PRACH on 11 bits	Yes
Support of GPRS re-selection C31/C32	Yes
Support of static and dynamic addressing	Yes
Support of power control Uplink and Downlink	Uplink = yes, Downlink is a network feature
Support of ciphering algorithms	GEA1, GEA2, GEA3
Support of compression algorithms	Yes, V42bis and IP header compression
Mode of operation	Class B and Class C modes of operation supported
R Reference point	Physical layer: Support of RS232 PPP is supported as L2 layer in the R reference point Authentication algorithms PAP, CHAP supported
IP connectivity	PDP type IP is supported IP termination in mobile or TE (laptop, PDA) supported
PDP context	10 PDP context descriptions stored in mobile PDP context description is edited using application in mobile, AT-command or using OTA Simultaneous PDP contexts are supported, maximum 4

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Dimension	Support
SIM	GPRS aware, as well as non-GPRS aware; SIM cards are supported
AT commands	Some of the supported commands: AT+CGDCONT – DEFINE PDP CONTEXT AT+CGEQREQ – Quality of Service Profile (REQUESTED) AT+CGEQMIN – Quality of Service Profile (Minimum Acceptable) AT+CGATT – PACKET DOMAIN SERVICE ATTACH OR DETACH AT+CGACT – PDP CONTEXT ACTIVATE OR DEACTIVATE AT+CGDATA – ENTER DATA STATE For more information, see www.sonyericsson.com/developer.

SIM AT services supported

Service	Mode		Support
CALL CONTROL BY SIM			Yes
MO SMS CONTROL			No
DATA DOWNLOAD TO SIM	Cell Broadcast SMS		Yes Yes
DISPLAY TEXT	Text of up to 240 characters (120 UCS2 coded)		Yes
	bit 1:	0 = normal priority	Yes
		1 = high priority	Yes
	bit 8:	0 = clear message after a delay	Yes
		1 = wait for user to clear message	Yes
GET INKEY	General: The GET_INKEY requires that the user confirms his/her choice		Yes
	bit 1:	0 = digits (0–9, *, # and +) only	Yes
		1 = alphabet set	Yes
	bit 2:	0 = SMS default alphabet	Yes
		1 = UCS2 alphabet	Yes
	bit 3:	0 = character sets defined by bit 1 and bit 2 are enabled	Yes
			Yes
		1 = character sets defined by bit 1 and bit 2 are disabled and the Yes/No response is requested	

Service		Mode	Support
GET INPUT		General: No. of hidden input characters	252
	bit 1:	0 = digits (0–9, *, # and +) only	Yes
		1 = alphabet set	Yes
	bit 2:	0 = SMS default alphabet	Yes
		1 = UCS2 alphabet	Yes
	bit 3:	0 = ME may echo user input on the screen	Yes
		1 = user input not to be revealed in any way (see note)	Yes
	bit 4:	0 = user input to be in unpacked format	Yes
		1 = user input to be in SMS packed format	Yes
	bit 8:	0 = no help information available	Yes
		1 = help information available	Yes
LAUNCH BROWSER			Yes
MORE TIME			Yes
PLAY TONE			Yes
POLLING OFF			Yes
POLL INTERVAL			Yes
PROVIDE LOCAL INFORMATION		'00' = Location Information (MCC, MNC, LAC and Cell Identity)	Yes
		'01' = IMEI of the ME	Yes
		'02' = Network Measurement results	Yes
		'03' = Date, time and time zone (DTTinPLI)	Yes
		'04' – Language setting	Yes
		'05' – Timing advance	Yes
REFRESH		General: The reset option requests the user to wait while the phone restarts	Yes
		'00' = SIM Initialization and Full File Change Notification	Yes
		'01' = File Change Notification	Yes
		'02' = SIM Initialization and File Change Notification	Yes
		'03' = SIM Initialization	Yes
		'04' = SIM Reset	Yes

Service	Mode		Support
SELECT ITEM			Yes
SEND DTMF			Yes
SEND SHORT MESSAGE	bit 1:	0 = packing not required	Yes
		1 = SMS packing by the ME required	Yes
SEND SS			Yes
SEND USSD			Yes
SET UP CALL		General: Capability configuration	Yes
		Set-up speech call CallParty	No
		Subaddress DTMF support	Yes
		'00' = set up call, but only if not currently busy on another call	Yes
		'01' = set up call, but only if not currently busy on another call, with re-dial	Yes
		'02' = set up call, putting all other calls (if any) on hold	Yes
		'03' = set up call, putting all other calls (if any) on hold, with re-dial	Yes
		'04' = set up call, disconnecting all other calls (if any)	Yes
		'05' = set up call, disconnecting all other calls (if any), with re-dial	Yes
SET UP EVENT LIST		'00' = MT call	Yes
		'01' = Call connected	Yes
		'02' = Call disconnected	Yes
		'03' = Location status	Yes
		'04' = User activity	Yes
		'05' = Idle screen available	Yes
		'06' = Card reader status	Not Applicable
		'07' = Language selection	Yes
		'08' = Browser termination	Yes
		'09' = Data available	No
		'OA' = Channel status	No
SET UP IDLE MODE TEXT			Yes, 1 row of text is supported

Service	Mode	Support
SET UP MENU		Yes
TIMER MANAGEMENT		Yes
OPEN CHANNEL		Yes
CLOSE CHANNEL		Yes
RECEIVE DATA		Yes
SEND DATA		Yes
GET CHANNEL STATUS		Yes

User Interaction with SIM AT

Display text

Text of up to 240 characters (120 UCS coded) is supported.

Text clearing times are 5–20 seconds with a 60-second time-out limit for the user to clear the text. 'Key' responses:

- 'End key' – Proactive session terminated by user.
- 'Back' – Backward move in proactive session.

Any other key clears the screen if the command is performed successfully.

Get inkey

Prompt for a one-character input. Pressing 'Ok' without entering a character gives warning message "Minimum 1 character". 'Key' responses:

- 'C' clears current character.
- 'End key' terminates the proactive session.
- 'Back' – Backward move in proactive session.
- 'OK' – Command performed successfully.

Get input

Prompt for character input. The phone will refuse to accept further input when maximum response length is exceeded. UI Maximum Response lengths:

- Digits Only – 160 characters.
- SMS default alphabet characters – 160 characters.

- Hidden Characters (digits only) – 20 characters.

'Key' responses:

- 'C' clears current character.
- 'End key' terminates the proactive session.
- 'Back' – Backward move in proactive session.
- 'OK' – Command performed successfully.

Select item

Scroll to highlight item for selection. 'Key' responses:

- Navigational key press down – Scroll down list.
- Navigational key press up – Scroll up list.
- 'End key' terminates proactive session.
- 'Back' – Backward move in proactive session.
- 'OK' – Command performed successfully.

Send short message

Default message "Sending message, please wait" can be replaced for the Alpha Identifier text, or suppressed completely if a null text is provided. Default responses are "MESSAGE FAILED" or "MESSAGE SENT". 'Key' responses:

- 'End key' or 'Back' ends the proactive session.

Set up call

If you are on a call when the commands 'Set up Call', 'putting all other calls on hold' are sent, the user will see the text 'Setting up a call current call will be held'. If 'OK' is pressed the current call will be put on hold and the new call set up. If you are on a call when the command 'Set Up Call, disconnecting all other calls' is sent, the user will see the

text 'Setting up a call current call will be disconnected'. If the 'OK' key is pressed the current call will be disconnected and the new call set up.

Set up menu

Incorporates a SIM Application Toolkit Menu Item into the main menu structure in the phone.

If an Alpha Identifier is supplied in the Set Up Menu command, this is used as the SIM AT entry in the main menu structure in the phone. If no alpha identifier is supplied and several items are found in the menu, a default title is used. If the SIM AT Menu Item is selected by pressing 'Select', all the items sent in the Set Up Menu command will be available for selection, in the same way as the Select Item command.

Entertainment

Audio and Video

File types	Formats	Extensions
Audio (All listed audio file formats are supported ringtone file formats)	MP4	.mp4
	MP3	.mp3
	M4A	.m4a
	3GPP™	.3gp
	AMR-NB	.amr
	AMR-WB	.awb, .amr
	WAV	.wav
	G-MIDI 1	.mid
	SP-MIDI	.mid
	iMelody	.imy
	XMF	.xmf
	WMA	.wma
Video (including audio part)	MP4 (video: MPEG4, audio: AAC or AMR)	.mp4
	3GPP™ (video: MPEG4 or H.263, H.264, audio: AAC or AMR)	.3gp
	WMV	wmv, .asf
Streaming transport	RTSP according to 3GPP™	
Video encoding	H.263 Profile 0, Level 10 MPEG-4 Simple Visual Profile Level 3	
Video decoding	MPEG-4 Simple Visual Profile Level 0 H.263 Profile 0, Level 10 H.264 Baseline Profile (Main subset), Level 1b	
Audio encoding	AMR-NB AAC-LC	
Audio decoding	MP3 (MPEG-1/2/2.5, audio layer 3), AAC, AAC+, eAAC+, AMR-NB, AMR-WB, AMR-WB+, WMA version 2,7,8: Class 1, WMA version 9: Level 3, GM, GML, SP-MIDI	

Java™

Feature	Functionalities
Java™ Platform, Micro Edition	• JSR-75 PDA/File • JSR-82 Bluetooth Wireless Technology API • JSR 118 MIDP 2.1 • JSR-120 Wireless Messaging API • JSR-205 Wireless Messaging API 2.0 • JSR-135 MMAPI 1.1 • JSR 139 CLDC 1.1 • JSR-172 Web Services • JSR-177 Security and Trust Services • JSR-180 SIP • JSR-184 Mobile 3D Graphics • JSR 185 Java™ Technology for the Wireless Industry • JSR-205 Wireless Messaging API 2.0 • JSR-211 Content Handler • JSR-226 SVG • JSR-229 Payment • JSR-234 Adv Multimedia Supplements • JSR-238 Mobile Internationalization • JSR-239 OpenGL ES • JSR-248 Mobile Services Architecture • Nokia UI API
Java 3D	• Mascot Capsule Ver.3 • JSR-239 OpenGL ES • JSR 184 Mobile 3D Graphics API for J2ME™

Imaging/Messaging

2.0 Megapixel camera

Facts and figures	
Digital still camera (DSC)	
Digital zoom	Main camera: 2.5x zoom (in VGA mode)
Photo fix	Improves an under-exposed picture by calculating and adjusting the light balance
Still camera settings bar	Yes
Shoot modes	Normal, Panorama, Frames, Burst

Facts and figures	
Picture sizes (resolution)	**2 MP** (1600x1200 pixels) **1 MP** (1280x960 pixels) **VGA** (640x480 pixels) Note: MP = Megapixel
Self-timer	Off, On
Effects	Off, Black & white, Negative, Sepia
White balance	Auto, Daylight, Cloudy, Fluorescent, Incandescent
Picture quality	Normal, Fine
Shutter sounds	Yes
Reset file number	Yes
Save to memory	Yes
Video recorder	
Video size (resolution)	QCIF (176x220 pixels)
Frame rate	30 fps (frames per second)
Video camera settings bar	
Video clip length	Up to 2 hours, For picture message
Night mode	Off, On
Self-timer	Yes, same as camera
Effects	Yes, same as camera
White balance	Yes, same as camera
Microphone	Yes
Reset file number	Yes, same as camera
Save to memory	Yes, same as camera

Video telephony

Facts and figures	
Picture sizes (resolution)	QCIF (176x220 pixels)
Digital zoom	Video call camera: 2x zoom Main camera used for video telephony: 4x zoom
Night mode	Yes
White balance	Auto
Brightness	Yes

Facts and figures	
Video coding	H.263 MPEG-4 (Simple Visual Profile Level 0)
Audio coding	AMR

Images

Images can be shared using a Bluetooth™ connection, MMS, email message, computer file transfer or memory card.

The image size is limited by the amount of free RAM.

Formats	Details
JPEG	ISO/IEC JPEG Baseline DCT Progressive DCT Non-differential Unlimited size
GIF	87a, 89a, support for interlacement, animation and transparency Unlimited size
BMP	Windows® bitmap format
PNG	Unlimited size
SVG	SVG Tiny 1.2, support for anti aliasing, compression, opacity and gradients
WBMP	Wireless bitmap Unlimited size

Supported character sets

Decoding text (Incoming MMS)	
• US-ASCII • ISO-8859-1 • ISO-8859-2 • Windows-1251 • ISO 10646 (UCS-2)	• UTF-7 • UTF-8 • UTF-16 • KOI8-R

Coding text (Outgoing MMS)
• UTF-8

Short Messaging Service

Feature	Support
SMS Service Centre Number	It is possible to pre-load the SMS Service Centre Number
Pictures	It is possible to insert a picture or an icon into the text message. EMS compliant mobile phones will be able to see the picture correctly
Reply to messages	It is possible to reply to received messages by SMS, MMS, voice message and email
Input methods:	Predictive writing and multitap
Copy and paste words	Yes
Teaching of predictive words that are not in the predictive dictionary	Yes
Possibilities when creating a message:	
Save a sent message in a "Sent items" folder	Yes
Insert a line in the message	Yes
Assign a validity period to the message	Yes
Use predefined messages	Yes
Possibilities when receiving a message:	
Reply to the sender	Yes
Forward the message	Yes
Save the message on SIM	Yes
Get delivery time and date	Yes
Possibilities of the previously sent message:	
Delivery report of the message	Yes (if requested when sending)
Forward the message	Yes
Save the message on SIM	Yes
Know the remaining capacity storage	Yes, > 95% full warning, capacity on SIM when saving to SIM
Possibilities of the previously received message:	
Reply to the sender	Yes
Save the message in the inbox	Yes
Forward the message	Yes

Feature	Support
Know the remaining capacity storage	Yes, > 95% full warning, capacity on SIM when saving to SIM
Supported ways for replying to a received SMS:	
Using SMS, MMS, voice message, email	Yes
Using phone call (set up a call to the number contained in the message body)	Yes
Using WAP call (go to the WAP address contained in the message body)	Yes
Using USSD session	No
Print using infrared	No
Possibility to enable the user to send an SMS to a list of recipients	Yes
Possibility to write an email address as a recipient address	Yes, if email gateway is present
SMS storage	On the SIM card and in the phone
Nokia Picture Messaging	Yes

Enhanced Messaging Service

Feature	Support
Level of compliance supported by the phone regarding the specifications described in release 99	Enhanced Messaging Service (EMS) according to the standard 3GPP™ TS 23.040 v4.3.0, with the addition of the ODI feature from 3GPP™ TS 23.040 v5.0.0
Number of messages that the phone is able to handle to generate a concatenated message	10
Outgoing messages	It is possible to: • See how many short messages an EMS message consists of before sending it. • Choose whether to send the message or not after writing it.
Incoming messages	• A signal is heard once all parts of the message have been received or when a time-out occurs. • It is possible to re-use the content of an EMS message. Sounds, pictures, and animations can be inserted in a new message, if the object is not protected using ODI.
Delivery report for concatenated messages	A receipt is received in the phone when all parts of a concatenated message have been delivered if a delivery report is requested when it is being sent

Feature	Support
Insert objects	It is possible to add pictures, animations and sounds to an EMS message
Sounds	Chimes high, chimes low, ding, tada, notify, drum, claps, fanfare, chords high, chords low
I-melody	Yes, version 1.2
Melodies	It is possible to: • Receive (always), send using EMS (if not copyright protected). • Download melodies and commercial tunes from WAP/ WAP portals.
WBMP	Yes
Picture sizes	16x16 pixels, 32x32 pixels, variable size in black and white
Pictures	It is possible to: • Edit pictures using PhotoDJ™. • Receive (always), send using EMS (if not copyright protected). • Download pictures from WAP or WAP portals.
Animations	There is support for the following animations: Angry, Crying, Flirty, Happy, Kiss, Sad, Tongue, Wow, Confused, Devil, Glasses, Indifferent, Laughter, Sceptical and Wink, as defined in 3GPP™ TS 23.040 v4.3.0. It is possible to: • Send and receive animations
TP-PID field value given by the phone before sending an EMS message	0x00

Multimedia Messaging Service

MMS/CSD parameters and MMS/GPRS parameters placement	MMS is bound to a MMS profile. A MMS profile is bound to a Data account. A data account contains either CSD parameters or GPRS parameters and possibly proxy settings
Possibility to pre-configure the MMS parameters in factory	• MMS/CSD: Yes • MMS/GPRS: Yes
Possibility to configure the MMS parameters by OTA provisioning	• MMS/CSD: Yes • MMS/GPRS: Yes
Possibility for all the parameters from the parameters set to be OTA provisioned at the same time	• MMS/CSD: Yes • MMS/GPRS: Yes

Possibility for only one parameter, in the set of parameters, to be OTA provisioned	• MMS/CSD: No • MMS/GPRS: No
OTA provisioning solution	OMA provisioning
Supplier indication of realized interoperability tests between its MMS User Agent and MMS Relay/Server from other suppliers	Yes
Support of a standard procedure for OTA provisioning of MMS parameters	OMA provisioning
Functionalities that the user is able to set during message composition:	• Message subject • Message priority • Email recipient address • Message Cc, Bcc recipient(s) address(es) • Delivery report request • Read report request • MSISDN recipient address • Delivery time • Validity period
From where can the user insert multimedia elements into multimedia messages:	• File manager • Camera album • Directly from camera • Contacts • Calendar • Task • Note • Browser (vBookmark) • PhotoDJ™ • MusicDJ™ • VideoDJ™ • Sound recorder
Possibility for sent messages to be memorized into a folder in phone memory	Yes
Actions that the user can perform after message retrieval:	• Reply to the sender of the message SMS/MMS • Reply to the sender and to Cc, Bcc people SMS/MMS • Forward the message • Delete the message • Save message in a dedicated folder • Call the sender of a message • Save item • Mark as unread • Details
Multimedia codecs/formats supported for audio	AAC, AMR, MPEG Layer 3, AWB, WAV, MP4, MIDI, iMelody, 3GPP™, XMF, M4A, WMA
Multimedia codecs/formats supported for video	MPG4, 3GPP™, SDP, WMV
Multimedia codecs/formats supported for image	JPEG, GIF87, GIF89A, PNG, SVG, WBMP, BMP

Supported formats for message presentation:	• Message body + attachments (email presentation) • SMIL version as described in OMA MMS IOP document version 1.2
Maximum message size that can be handled by the phone for message	Content Class and Creation mode are applied. Maximum size can also be customized
Maximum number of objects supported in message	30 objects is standard. It is possible to increase the number through configuration
Maximum text size	5,000 characters/text

Email client technical data

Feature	Support
Bearer type UMTS (IP)	Yes
Bearer type GSM Data (IP)	Yes, GPRS, ISDN and analog
Character sets	ISO: ISO-8859-1, ISO-8859-2, ISO-8859-5, ISO-8859-7, ISO-8859-9, ISO-8859-10 Windows: Windows-1251, Windows-1252, Windows-1254, Windows-1255, Windows-1258 US-ASCII Unicode: UTF-7, UTF-8, UTF-16 Japanese: Shift_JIS, ISO-2022-JP Cyrillic: KOI8-R Simplified Chinese: GB2312, GB18030 Traditional Chinese: Big5 Thai: TIS-60
OTA provisioning solution	Yes
Protocols	POP3 and IMAP4
Push email	IMAP Idle (extension of IMAP4Rev1), OMA Email Notification 1.0 and scheduled checking
Secure email	SSL/TLS, both port methods (POPS/IMAPS) and STARTTLS
Remote configuration	OMA Client Provisioning
HTML mail	Yes (tags removed)
Thumbnailed image attachments	Yes
Message management	User selectable inbox size, save messages to Memory Stick, arrange messages by categories Headers only or size limits
ESMTP	Yes
Background sending	Yes

Connectivity

Bluetooth™ technical data

Dimension	Support
Bluetooth capability statement	This phone supports Bluetooth Specification, version 2.0 with enhanced data rate (EDR)
Bluetooth profiles	Basic Imaging Profile Dial-up Networking Profile File Transfer Profile Generic Access Profile Generic Object Exchange Profile Handsfree Profile Headset Profile Human Interface Device (HID) Profile Java API Object Push Profile Personal Area Networking Profile Serial Port Profile Synchronization Profile SyncML OBEX binding Advanced Audio Distribution Profile (A2DP) Audio/Video Remote Control Profile Phonebook Access Profile
Connectable devices	All products supporting Bluetooth spec. 1.1, or higher, and at least one of the profiles above
Coverage area	Varies due to radio performance on remote device and the occurrence of obstacles. Up to 10 metres (33 feet)
Transmission power	Class 1, typical +3 dBm or 2 mW
Frequency band	2.4 GHz – the unlicensed ISM band
Power consumption	GSM host processor excluded: Standby, Bluetooth On mode: <0.6 mA Voice to headset (HV3 master): 11 mA (7 mA with EDR functionality, 2EV3 master). Dependent on various parameters such as if the phone is master or slave. Data mode average: 27 mA at 172.8 Kbps symmetrical (DH1)
Data transmission rate	Up to 600 Kbps asymmetric and up to 350 Kbps symmetric from an application level

OMA Data Synchronization (SyncML) technical data

Feature	Support for Sync ML
SyncML compliance	The phone is fully SyncML compliant, having passed SyncML Conformance testing. SyncML 1.2 or SyncML 1.1.2 is used depending on configuration and both are supported in Server-alerted synchronization
Basic data formats	Contacts: vCard 2.1, Calendar: vCalendar 1.0 (vEvent) Tasks: vCalendar 1.0 (vTodo) Notes: text/plain, Bookmarks:vBookmark 1.0
Possibility for operators to extend SyncML functionality	The device may be configured to include preset SyncML settings, and to control whether SyncML 1.1 or SyncML 1.2 will be used
Transport method for SyncML messages	HTTP, HTTPS,OBEX (USB, Bluetooth)
Possibility for the user to configure login parameters (for example, username and password) to access the remote database	Yes
Configuration parameters that can be entered/modified by the user	Server URL, Username, User PWD, Paths to databases (Calendar, Contacts, Notes, Tasks and Bookmarks), UserID and PWD for databases, Databases to be synchronized (On/Off), Internet profile, Synchronization interval, Server ID and Server PWD, permission to allow server-alerted synchronization and roaming options. Can be provisioned with OMA Client provisioning v1.1 and OMA Device Management v1.2
Ability to deal with multiple servers	Yes
Ability to perform conflict resolution actions	No

Microsoft® Exchange ActiveSync

Feature	Support for Exchange ActiveSync
Protocol version	The phone supports version 2.5 of Microsoft Exchange ActiveSync
Supported applications	Email, Calendar, Phonebook
Transport method used	HTTP, HTTPS
Possibility for the user to configure login parameters for remote server	Yes
Configuration parameters that can be entered/modified by the user	Server URL, username, domain name, password, applications to sync, email message size, email attachment size, email date range, message alert sound, calendar date range, interval sync, secure connection, roaming option

Feature	Support for Exchange ActiveSync
Ability to use multiple servers	No
Ability to perform conflict resolution	No

Web browser technical data

Feature	Support in the browser
Bookmarks	Yes, with folders and sorting supported
Bookmark Export/Import	Yes, can be sent and received using vBookmark format using Bluetooth™, SMS, MMS and email
Browser compliancy	The Web browser is compliant with the following standards: HTML 4.01 XHTML Basic 1.0 XHTML 1.1, Module-based XHTML XHTML Mobile profile Compact HTML for Small Information Appliances WML 1.3 Cascading Style Sheets, level 2 revision 1, CSS 2.1 Specification WAP CSS Specification, Version 26-Oct-2001 (WAP-239-WCSS-20011026-a) ECMA-script according to specifications found at http://www.ecma-international.org/publications/standards/Stnindex.htm ECMAScript Mobile Profile AJAX (Asynchronous JavaScript and XML) Document Object Level Model 2 (DOM 2) Scalable Vector Graphics, Mobile SVG Profile: SVG Tiny, version 1.2 For further details, see the Developers Guideline WAP User Agent strings and profiles for Sony Ericsson mobile phones at Developer World http://developer.sonyericsson.com
Browser version	Access NetFront 3.4
Cache	Yes (size 300 kB and 1 MB Flash)
Character sets *	Most standard character sets, among others UTF-8 (Default), UTF-16, USASCII, Latin1, UCS2. For updated and detailed information, see the WAP User Agent strings and profiles for Sony Ericsson mobile phones Developers guidelines at Developer World http://developer.sonyericsson.com Note: When creating WML applications, it is recommended to always save the page contents as UTF-8
Clear cache	Yes, persistent. By user interaction, at SIM card change or master reset
Frames	Full Frame support: Frames, IFrames

Feature	Support in the browser
Image formats and animations	GIF (interlaced and non-interlaced) WBMP, JPEG, PNG, BMP and SVG. Animated GIFs, animated SVG and Flash
Schemes	wtai, mailto:, smsto:, tel, rtsp, http, https
Streaming	Mobile TV, progressive download, RTSP, Java script controls
Web feeds	Ticker, podcasts, enclosures, OPML import. No support for ATOM
User agent profile	
User Agent Profiles	Yes, list of client characteristics – for example screen size. For details, see the WAP User Agent strings and profiles for Sony Ericsson mobile phones Developers guidelines at Developer World http://developer.sonyericsson.com
URL sent pointing to the UA profile at the beginning of browser session	Yes. For details, see the WAP User Agent strings and profiles for Sony Ericsson mobile phones Developers guidelines at Developer World http://developer.sonyericsson.com
Download	
OMA download functionality	Yes
HTTP GET solution to download content/ Uses browser for download	Yes
Other download content	Yes. No download limit when using HTTP protocol
Download application/product memory check	Yes
Downloaded object solution	Yes. The user is informed where the content is saved and asked if it should be used at once or later
UAP indication for downloading	Yes
Other features	Yes. Store, delete, forward, use, manage
Object formats	All formats can be downloaded and stored, but only formats supported by the phone can be used by the phone
Resume	Yes
Background download	Yes
Progressive download	Yes
Streaming	Yes
Browser GUI	
Selection keys	Yes. Green/Red paradigm plus two selection keys and centre navigation key
Separate/dedicated back or delete keys	Yes

Feature	Support in the browser
Display backlight on when browsing	Yes
Predictive writing	Yes
"http://" string displayed automatically when entering URLs	Not displayed but the "http://" is added automatically to the URL
"www" added automatically when entering URLs	No
Combined Search/Go To input field	Intelligent input field changes appearance (Search or Go to) depending on user input. "www", ".com" and other URL syntax can be used to trigger the Go To appearance
Internet network features	
Bluetooth (as local connection)	Yes
Infrared (as local connection)	No
Network settings	Yes
PPP Authentication	PAP, CHAP supported
Security	HTTPS authentication TLS version 1 SSL version 3 WIM on SIM ICC X.509 certificate support, WAP Profile WPKI OTA download of trusted certificates
USB (as local connection)	Yes
PUSH	
Content types	
Service Indication (SI)	Yes
Service Loading (SL)	Yes
Cache Operation (CO) content type	No
Session Initiation Application (SIA)	Yes
Man Machine Interface	
SI/content retrieval postponing	Yes
SI menu structure accessability	Messaging, Inbox
SL reception warning	The user can make a choice if a dialogue is wanted or not before loading the SL
SIA reception warning	Yes

Feature	Support in the browser
Cache size limitations	The oldest push in the inbox will be discarded
Number of push messages	Depends on the size of the push messages. Around 20 push messages with a size of 1024 bytes URL and 1024 bytes Indications for Service Indication can be stored
Push deactivate	Yes
Dynamic push menu changes	No. There are no changes in the menus when activating/deactivating push
Security	
Mechanisms for push	None
Trust with PPG	Sending a SIA is the most reliable
WSP push sessions	No
HTTP push sessions	The White List (a setting to allow push messages only from certain addresses) is supported for IP address
SMS connection-less push	The White List (a setting to allow push messages only from certain addresses) is supported for SMS Centre
Denial of service/spoofing	Setting to select when to allow push messages: Always, always ask or never. There is also a setting to select whether to allow push messages from all senders or only from certain addresses (the White List)

Client Provisioning

Feature	Support	
Provisioning		
Provisioning types		**OMA Client provisioning (v1.1)**
Total Parameter sets	10 (shared between the WAP provisioning types) < or = 10 (total number of data accounts)	
Parameter set list	name, homepage and homepage title (1st bookmark element), proxy/GW address, bookmarks (remaining bookmark elements), CSD phone number, CSD data rate, CSD dial type, GPRS APN, protocol authentication, GW authentication, secure connection on/off	name, homepage, proxy/GW address, CSD phone number, CSD data rate, CSD dial type, CSD response timer, GPRS APN, protocol authentication, GW authentication, GPRS QoS

Feature	Support
Parameter sets include	CSD, GPRS (different sets)
Factory pre-configuration	CSD (possibility to lock a setting), GPRS
OTA	CSD, GPRS configuration possible
Security mechanism	

Bearer	**OMA Client Provisioning**
OTA using SMS	Uses security mechanism (SEC) methods according to OMA-WAP-ProvCont-v1_1-20050428-C (see www.openmobilealliance.org)
Interface	

Bearer	**OMA Client Provisioning**
OTA using SMS	For NETWPIN the user is asked to accept to install received settings. For USERPIN, USERNETWPIN and USERPINMAC the user is subsequently asked to enter a PIN code that is a shared secret between the service provider and the user
Re-provisioning Interface	OMA Client Provisioning
OTA using SMS	If the settings previously installed were privileged or have higher priority, it might not be possible to install the settings again unless the terminal is reset, otherwise as above
Carrier reset/provisioning	Yes, but not if the set is pre-configured in the factory and locked
SWIM	Not used for provisioning. The SWIM is only used for WAP security, both SSL/TLS connections and digital signatures
Applicative provisioning	
Preferred bearer customization	Yes
Other applications/features	Yes (MMS, OMA Data Synchronization, Wireless Village, OMA Device Management, Streaming)
Technologies	
OMA Client provisioning	Yes, Client Provisioning version 1.1
Openwave OTA	No
Other	No
Provisioning bearer	SMS

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Feature	Support
Parameter sets available	Yes
Parameter sets for OTA modification	Yes

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Abbreviations

3G

Third-generation

3GPP™

3rd Generation Partnership Project

A2DP

Advanced Audio Distribution Profile

AAC+

Advanced Audio Coding

AMR

Adaptive Multi Rate

API

Application Programming Interface

AVRCP

Audio Video Remote Control Profile

Bluetooth PAN

Bluetooth Personal Area Network

CS

Circuit Switched

CSD

Circuit Switched Data

DRM

Digital Rights Management

DTMF or Touch Tone

Dual Tone Multi-Frequency signal

EDGE

Enhanced Data Rates for GSM Evolution

E-GSM

Extended GSM

eAAC+

Enhanced Advanced Audio Coding

EDR

Enhanced Data Rate

EFR

Enhanced Full Rate, speech coding

EMS

Enhanced Messaging Service

ETSI

European Telecommunications Standards Institute

FM

Frequency Modulation of the (radio) carrier wave

FR

Full Rate, speech coding

GIF

Graphics Interchange Format

GPRS

General Packet Radio Services

GSM

Global System for Mobile Communications

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HSCSD

High Speed Circuit Switched Data

HSDPA

High Speed Downlink Packet Access

HTML

HyperText Markup Language

HTTP

HyperText Transfer Protocol

iHTML

Inline HTML

IrDA

Infrared Data Association

JPEG

Joint photographer expert group

MIDI

Musical Instrument Digital Interface

ME

Mobile Equipment

MMI

Man-Machine Interface. See UI

MP

Megapixel

MP3

Short for "MPEG-1 layer 3"

MPEG

Moving Picture Experts Group

MT

Mobile Termination

MTP

Media Transfer Protocol

ODI

Object Distribution Indicator

OMA

Open Mobile Alliance

OTA

Over-The-Air Configuration

PDA

Personal Digital Assistant

PDP

Packet Data Protocol

PIM

Personal Information Management

PNG

Portable Network Graphic

QCIF

Quarter Common Intermediate Format

RDS

Radio Data System

RSS

Really Simple Syndication

RTSP

Real Time Streaming Protocol session control.

SI

Service Indication

SL

Service Loading

SIM card

Subscriber Identity Module card

SMS

Short Messaging Service

SP-MIDI

SP-MIDI stands for Scalable Polyphony MIDI

SS

Supplementary Services

SSL

Secure Socket Layer

TFT

Thin Film Transistor

TLS

Transport Layer Security

TTI

Transmission Time Interval

UI

User interface

URL

Uniform Resource Locator

USSD

Unstructured Supplementary Services Data

VGA

Video Graphics Array

WAP

Wireless Application Protocol

WAV

Microsoft Waveform audio format

WBMP

Wireless BitMap

WCDMA

Wideband Code Division Multiple Access

WMA

Windows Media Audio

WML

Wireless Markup Language

WMV

Windows Media Video

WSP

Wireless Session Protocol

WWW

World Wide Web

XHTML

Extensible HyperText Markup Language

XML

Extensible Markup Language

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Related information

Documents

- Sony Ericsson User guide
- Sony Ericsson FAQ
- AT Command Reference Manual
- WAP 2.0 Specifications

Links

- www.sonyericsson.com/
- www.sonyericsson.com/support
- www.sonyericsson.com/updateservice
- www.ericsson.com/mobilityworld/
- www.midi.org
- www.extendedsystems.com
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